

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
24 March 2005 (24.03.2005)

PCT

(10) International Publication Number  
**WO 2005/025494 A3**

(51) International Patent Classification<sup>7</sup>: C12N 5/00

(21) International Application Number: PCT/US2004/025518

(22) International Filing Date: 5 August 2004 (05.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 10/637,869 8 August 2003 (08.08.2003) US

(71) Applicant (for all designated States except US): IRx THERAPEUTICS, INC. [US/US]; 140 West 57th Street, Suite 9C, New York, NY 10019 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): HADDEN, John, W. [US/US]; 428 Harbor Road, Cold Spring Harbor, NY 11724 (US).

(74) Agent: KOHN, Kenneth, I.; Kohn & Associates, PLLC, Suite 410, 30500 Northwestern Highway, Farmington Hills, MI 48334 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 30 June 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/025494 A3

(54) Title: VACCINE IMMUNOTHERAPY FOR IMMUNE SUPPRESSED PATIENTS

(57) Abstract: A method of immunotherapy to treat cancer or a synergistic anti-cancer treatment by administering an effective amount of a natural cytokine mixture (NCM), an effective amount of cyclophosphamide (CY), or an effective amount of indomethacin (INDO), wherein the NCM, CY, or INDO are administered singly or in communications thereof. An anti-metastatic treatment method by promoting differentiation and maturation of immature dendritic cells in a lymph node; allowing presentation thereof; and preventing development of metastasis. A method of using an NCM as a diagnostic skin test for predicting treatment outcome. A method of pre-treating dendritic cells (DC) and a method of treating monocyte defects characterized by sinus histiocytosis or a negative NCM skin test. Compositions and methods for eliciting an immune response to endogenous or exogenous tumor antigens.